## (19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 28 October 2004 (28.10.2004)

**PCT** 

### (10) International Publication Number WO 2004/093119 A3

(51) International Patent Classification7: G09G 3/20

H01J 31/12,

(21) International Application Number:

PCT/IB2004/050434

(22) International Filing Date: 14 April 2004 (14.04.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

03101055.6

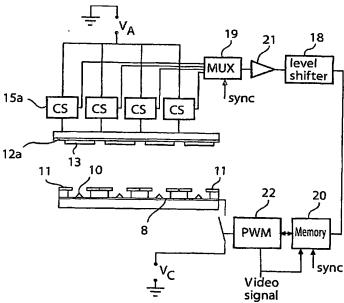
17 April 2003 (17.04.2003)

- (71) Applicant (for all designated States except US): KONIN-KLIJKE PHILIPS ELECTRONICS N.V. [NL/NL]: Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): DE BRUIN, Dirk [NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). ENGELAAR, Pieter, J. [NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).

- (74) Agent: DEGUELLE, Wilhelmus, H., G.; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: DISPLAY DEVICE



(57) Abstract: The present invention relates to a display device comprising a screen (1) with a plurality of pixels. Each pixel has a corresponding electron emitting structure (8, 9, 11), such as a gate-cathode combination. The electrons emitted by each electron emitting structure (8, 9, 11) are accelerated toward an anode layer (12) in the screen (1). The anode layer (12) is subdivided into a plurality of separate portions (12a, ... 121), and each such portion has a corresponding current meter (15a, ... 151) for measuring the portion's part of the total anode current of the display device. This entails an improved capability of measuring the properties of the individual electron emitting structures, which serves to adjust each electron emitting structure's signal in order to obtain a more uniform display device.



# WO 2004/093119 A3



#### Published:

with international search report

(88) Date of publication of the international search report:  $$6${\rm May}\ 2005$ 

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

# INTERNATIONAL SEARCH REPORT

Interior No PCT/IB2004/050434

A CLAS	SIEICATION OF SUB-ITE		PCT/IB2004/050434		
ÎPC 7	SIFICATION OF SUBJECT MATTER H01J31/12 G09G3/20				
According	to International Patent Classification (IPC) or to both national c	handi - I			
B. FIELD	S SEARCHED	rassification and IPC			
Minimum	documentation searched (classification system followed by class	ssification symbols)			
IPC 7	H01J G09G	enication symbols)			
Document	ation searched other than minimum documentation to the exten	t that such documents are include	led in the fields searched		
Electronic	data base consulted during the international search (name of d	ata base and, where practical s	Agrob towns used		
EPO-Ir	nternal	, , , , , , , , , , , , , , , , , , ,	out of the usery		
C. DOCUM	IENTS CONSIDERED TO BE RELEVANT				
Category °					
		·	Relevant to claim No.		
A	EP 1 225 557 A (MATSUSHITA ELE LTD) 24 July 2002 (2002-07-24) cited in the application paragraph '0060!; figures 1,2	1-10			
<b>A</b>	GB 2 378 344 A (PRINTABLE FIEL LTD) 5 February 2003 (2003-02- page 2, line 16 - page 3; clai	1-10			
A	US 6 097 356 A (FAN NONGQIANG) 1 August 2000 (2000-08-01) columns 2,16, lines 58-60,16-1		1-10		
Furthe	er documents are listed in the continuation of box C.	X Patent family mem	bers are listed in annex.		
Special cate	egories of cited documents:				
A° documer conside	nt defining the general state of the art which is not pred to be of particular relevance occurrent but published on or after the International		d after the international filing date in conflict with the application but principle or theory underlying the		
L' documen which is citation	tt which may throw doubts on priority claim(s) or scied to establish the publication date of another or other special reason (as specified)	involve an inventive ste	elevance; the claimed invention lovel or cannot be considered to the period of the comment is taken alone elevance; the claimed invention		
O" documen other me P" documen	nt referring to an oral disclosure, use, exhibition or eans It published prior to the interpolational difference of the control of the contro	document is combined	o Involve an inventive step when the with one or more other such docu- on being obvious to a person skilled		
	in the priority date claimed	*&* document member of the Date of mailing of the int			
	January 2005	01/02/2005	·		
ame and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk		Authorized officer			
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016		Ruiz Perez, S			

### INTERNATIONAL SEARCH REPORT

Information on patent family members

Internation No PCT/IB2004/050434

M-1						
Patent document cited in search report		Publication date		Patent family member(s)		Publication date
EP 1225557	A	24-07-2002	EP CN WO JP TW	1225557 1377495 0126085 2001350442 472277	T A1	24-07-2002 30-10-2002 12-04-2001 21-12-2001 11-01-2002
GB 2378344	Α	05-02-2003	WO	02097774	A2	05-12-2002
US 6097356	Α	01-08-2000	NONE			